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Correspondence

Letters should not exceed 400 words and should be typed double spaced (including the refences) and be signed by all authors.

TO THE EDITOR Genitourinary Medicine

Effect of ofloxacin on *Treponema pallidum* in incubating experimental syphilis

Sir,

Ofloxacin is a new quinolone antibacterial compound for the oral treatment of systemic infections. It has rapid bactericidal activity against a wide range of Gram positive and Gram negative, aerobic, and anaerobic bacteria, including emerging pathogens (such as methicillin resistant *Staphylococcus aureus, Pseudomonas aeruginosa, Proteus rettgeri,* and *Serratia* spp).[1] It is active against *Neisseria gonorrhoeae* and other common urogenital pathogens *(Ureaplasma urealyticum, Chlamydia trachomatis, Gardnerella vaginalis,* and *Mycoplasma hominis).*[2-5] Ofloxacin possesses good pharmacokinetics in man, with a mean peak serum concentration of 3·8 mg/l and a half life of about six hours after a single 300 mg oral dose.[6]

We report the results of animal experiments carried out to assess whether ofloxacin, used to treat urogenital infection, can delay or mask the development of simultaneously acquired incubating syphilis.

We infected intratesticularly 26 rabbits (weighing 3-3·5 kg) with 2 ml of a suspension of 2×10^7 ml of Nichols strain treponemes.[7] Three days later, we treated 10 of the rabbits with 100 mg/kg ofloxacin (Glaxo), given as single daily oral dose, for three consecutive days. Nine rabbits were given procaine penicillin G, and seven were left untreated.

After a single dose of ofloxacin the mean peak serum concentration was 29·5 mg/l, about eight times that obtained in man after a single therapeutic oral dose of 300 mg.[6]

At the end of the experiments, three rabbits were injected intratesticularly with treponemes obtained from rabbits treated previously with ofloxacin. These rabbits were left untreated and observed during the following days.

Seven days after inoculation all the ofloxacin treated rabbits, as well as those untreated, developed syphilitic orchitis. Increasing *Treponema pallidum* haemagglutination assay (TPHA) titres appeared five to 10 days later in the ofloxacin treated and in the untreated rabbits.

Treponemes were detected in the testes of the rabbit that were killed 30 days after infection. Serological tests for syphilis in the penicillin treated rabbits gave negative results. The three rabbits infected with treponemes obtained from rabbits previously treated with ofloxacin developed syphilitic orchitis and serological reactivity.

The results of this study show that ofloxacin does not cure incubating syphilis in the rabbit. Therefore, ofloxacin seems to have no effect on *Treponema pallidum* in experimental syphilis. If these results are confirmed in man, ofloxacin could be used to treat gonorrhoea and other urogenital infections without any risk of delaying or masking the development of simultaneously incubating syphilis.

Yours faithfully,
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TO THE EDITOR Genitourinary Medicine

Declaring cure in women with gonorrhoea

Sir,

We read with interest the recent report of a study into the number of follow up appointments that are required to ensure cure of gonorrhoea in women.[1] For comparison, we present a retrospective study of uncomplicated gonorrhoea in women attending a Glasgow genitourinary medicine clinic in 1985.

Gram stained smears were made of specimens taken from the urethra and endocervix and were examined immediately. Specimens for culture, taken from the urethra, endocervix, and rectum of all patients and from the throat of selected patients, were inoculated immediately on to non-selective and selective blood agar. Suspected colonies were identified as being *Neisseria gonorrhoeae* by rapid carbohydrate utilisation tests and the Phadebact GC Test (Pharmacia Diagnostics).

Treatment was a single oral dose of 2 g ampicillin and 1 g probenecid or 300 mg minocycline. All patients were interviewed at least once by a health adviser for counselling and contact tracing. The first follow up appointment was a week after treatment, and further follow up appointments were arranged at suitable times.

Gonorrhoea was diagnosed by culture in 265 women. The first set of cultures gave positive results in 259 women (98%) but six (2%) required two sets of cultures for diagnosis. In no case was a third set of cultures necessary to establish a diagnosis.

After treatment, at least one follow up appointment was kept by 235 women (89%). Gonorrhoea was still detected in 10 (4%); this could not be explained in three cases, but five cases were believed to be treatment failures, and reinfection was suspected in two patients. Of the 225 women with satisfactory

first follow up test results, 188 (84%) attended for a second follow up appointment, usually a week later. Gonorrhoea was detected in three women (2%). Reinfection was suspected in two cases, but the third was considered to be a treatment failure. Of the 185 women with satisfactory second follow up test results, 117 (63%) attended for a third follow up appointment, up to four weeks later. *N gonorrhoeae* was isolated from two women, but both were considered to be reinfected.

With the diagnostic tests in use in our clinic, 2% of women infected with gonorrhoea require two sets of tests for diagnosis. If only one test of cure had been carried out, two early reinfections and one treatment failure would have been missed. We therefore believe that two follow up appointments are necessary after treatment.

Yours faithfully,

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TO THE EDITOR Genitourinary Medicine

Paediatric gonorrhoea, sexual abuse, and towels

Sir,

Widespread professional denial of the sexual abuse of children is, unfortunately, supported by the recent article "Paediatric gonorrhoea: non-venereal epidemic in a household."[1] Though sexual abuse was considered by the authors, the impression given was that the child's denial of abuse led to acceptance of the "towel theory" as the source of the primary and secondary infections, even in the face of the refusal of the 18 year old family friend to submit to testing. Nothing is said about the possibility of her having had a male companion, as another possible source. When children are questioned, the possibility of sexual contact is usually initially denied. Unless the professionals investigating a child with gonorrhoea are highly skilled in conducting diagnostic disclosure interviews, the investigation will often cease at this initial denial. The absence of physical signs of sexual abuse in no way rules such abuse out.[2]

It is well documented that children with gonorrhoea become infected in the same way as adults, that is by sexual contact, either with adults or with other children.[3 4] Exceptions are unusual and unlikely.[3 5] To my knowledge, there is no evidence that the prepubertal vagina is "predisposed" to gonococcal infections. It does, however, become infected after contact with a source of gonorrhoea, whereas after puberty the cervix only may be infected because of differences in the epithelium.

Reports of pharyngeal gonorrhoea in children note the high probability of sexual abuse as the source.[6 7] At Duke University Medical Center, three site cultures for gonorrhoea are almost always undertaken for children being evaluated for genital discharge or possible sexual abuse. Since 1980, two young girls and one boy have been found to have pharyngeal gonorrhoea. Other sites cultured in these children gave negative results. All three children were found by additional criteria to have been sexually abused.

To attribute gonococcal infection in children to transmission from fomites, despite the strong evidence for sexual contact, is to leave children unprotected against future abuse.

Yours faithfully,

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TO THE EDITOR Genitourinary Medicine

In vitro activity of 14 antimicrobial agents against *Neisseria gonorrhoeae* from Spain

Sir,

The prevalence of gonorrhoea throughout the world and the increasing number of infections caused by penicillinase producing *Neisseria gonorrhoeae* (PPNG) is a cause for concern. Additionally, the increased incidence of strains with reduced susceptibility to penicillin (MIC $\geq$ 0·05 mg/l),[1] and the appearance of spectinomycin resistant strains,[2 3] provide an incentive to search for new drugs that can be used as alternatives in the treatment of gonorrhoea and to develop a surveillance model in Europe.

We present here the susceptibility of 50 non-PPNG and 25 PPNG strains (recently isolated in Spain) to the following antimicrobials: penicillin, ampicillin, cefuroxime, cefonicid, ceftriaxone, spectinomycin, tetracycline, erythromycin, RU-28965, rosoxacin, ofloxacin, norfloxacin, enoxacin, and ciprofloxacin. Susceptibility tests were performed as described by Meheus *et al.*[4]

The table shows the activities of the 14 antimicrobial agents. The most active antimicrobial agents against both PPNG and non-PPNG strains were ceftriaxone, ciprofloxacin, ofloxacin, and rosoxacin.

Several assays of antimicrobial activity against both PPNG and non-PPNG strains have been compared. These comparisons have varied somewhat in methods, strains, and results, but we know of no study from Spain using antimicrobials. Nevertheless, most assays confirm our results, showing ceftriaxone and cefuroxime as highly active against *N gonorrhoeae*,[5 6] and of the quinoline derivatives, all studies confirm that ciprofloxacin is the most active.[7 8]

On the basis of the in vitro susceptibility and pharmacological and treatment assay data of all the drugs tested, cefuroxime, ceftriaxone, cefonicid, ofloxacin, ciprofloxacin, and rosoxacin seem to be the most appropriate alternatives to penicillin and spectinomycin. The potential of the quinolines, however, as single dose treatment drugs, and their antimicrobial activity against